

REMARKS

Upon entry of the present amendment, claims 1-8 will remain pending in the above-identified application and stand ready for further action on the merits.

The amendments made herein to the specification and claims do not incorporate new matter into the application as originally filed. For example, the amendment of Table 5 at page 70 simply deletes data reported for "Loop tack" for Examples 6-7 and Comparative Examples 16-20. This is done to remove typographical errors occurring in the reported "Loop tack" data for each of Examples 6-7 and comparative Examples 16-17 and 19-20, wherein the typographical error was the result of a clerical error occurring during preparation of the inventors original application, wherein "Adhesive power" values in Table 5, were accidentally copied into the column for "Loop tack" values for each of Examples 6-7 and Comparative Examples 16-17 and 19-20. Regarding the amendment to claim 1, it finds clear support at page 18, line 21, etc.

Accordingly, based upon the above considerations, entry of the present amendment is respectfully requested.

***Claim Rejections Under 35 USC § 103***

Claims 1-8 have been rejected under 35 USC § 103(a) as being unpatentable over EP 0 299 499 (EP '499). Reconsideration and

withdrawal of this rejection is requested based upon the following considerations as well as the attachments included herewith.

The Present Invention and Its Advantages

The present invention (claim 1) is directed to a novel hydrogenated block copolymer having specific structures as described below.

The features of the hydrogenated block copolymer of the present invention reside in

(1) having a vinyl bonding amount (V) based on the conjugate diene compound of from not less than 37% to less than 70%;

(2) having a total hydrogenation ratio (H) of the unsaturated double bond based on the conjugate diene compound of from not less than 55 to less than 80;

(3) satisfying the relational formula:  $V < H < 1.25 \times V + 10$ ;  
and

(4) having a hydrogenation ratio of the vinyl bond of 82% or more.

Hydrogenated block copolymers having such specified vinyl bonding amount (V) and hydrogenation ratio (H), satisfying the specific relational formula and having a high hydrogenation ratio of the vinyl bond are not disclosed in the cited reference.

With the use of the copolymer of the present invention, polyolefin resin compositions having excellent impact resistance, elongation, etc., and polyolefin resin compositions having excellent softness and transparency can be provided (claims 2-5).

The excellent physical property balance obtained by the present invention is summarized in **Tables 1-1** and **1-2** attached hereto.

Non-obviousness of the Instant Invention

As described above, the present invention relates to a copolymer having specific hydrogenation ratio (H), vinyl bonding amount (V) and hydrogenation ratio of the vinyl bond, and showing excellent characteristics owing to such specific structures.

For example, the polypropylene composition in Comparative Example 2 is a polymer composition in which a polymer having a lower hydrogenation ratio than the range as presently claimed was used. It can be seen that the composition of Comparative Example 2 is inferior in bending elastic modulus and various other characteristics.

The polypropylene composition in Comparative Example 13 is a polymer composition in which a polymer having a higher hydrogenation ratio was used. It can be seen that the composition is markedly inferior in transparency.

The attached **Fig. 1** shows the relation between the hydrogenation ratio and the vinyl bonding amount in the present invention and in the cited reference. It can be seen that the region as presently claimed is distinct from the region of the cited reference and is a limited region for obtaining excellent properties.

The hydrogenation ratio of the vinyl bond is disclosed as [B] in the reference. In the attached **Fig. 3**, the relationship is shown between the hydrogenation ratio of the vinyl bond in the present invention and that in the cited reference. The cited reference discloses a very broad region. In contrast, the present invention relates to a very limited region, and therefore the effects of the invention can be attained.

That is, excellent properties as obtained by the present invention cannot be attained unless the hydrogenated block copolymer is within the claimed range.

The cited EP '499 reference does not specifically disclose hydrogenated polymers in such a limited region as claimed, nor suggests excellent properties as obtained by the invention.

Apart from the above considerations, it is noted that claims 6 and 8 are directed to a composition comprising a hydrogenated block copolymer having a specific structure as shown below and an adhesion-imparting agent.

The features of the hydrogenated block copolymer reside in

- (1) having a vinyl bonding amount (V) based on the conjugate diene compound of from not less than 30% to less than 70%;
- (2) having a total hydrogenation ratio (H) of the unsaturated double bond based on the conjugate diene compound of from not less than 30 to less than 80;
- (3) satisfying the relational formula:  $V < H < 2 \times V + 10$ ; and
- (4) having a hydrogenation ratio of the vinyl bond of 82% or more.

The cited EP '499 reference does not disclose a viscous adhesive composition using a hydrogenated block copolymer having such a specific vinyl bonding amount (V) and hydrogenation ratio (H), satisfying the specific relational formula of (V) and (H), and having a high hydrogenation ratio of the vinyl bond. The viscous adhesive composition of the present invention is excellent in adhesive power, retentivity and melt viscosity change ratio.

The excellent physical property balance is summarized and shown in the attached **Table 3**.

For example, the viscous adhesive composition of Comparative Example 17 is a composition in which a hydrogenated block copolymer having a lower hydrogenation ratio of the vinyl bond than the range as claimed was used. This composition showed remarkable viscosity change.

On the other hand, the viscous adhesive composition of Comparative Example 19 is a composition in which a hydrogenated block copolymer having a lower vinyl bonding amount was used. This composition resulted in low retentivity.

The relationship between the hydrogenation ratio and the vinyl bonding amount in the present invention and in the cited reference is shown in the attached **Fig. 2**. Only one point, which is Example 3 of the cited reference, falls within the claimed range. However, the hydrogenation ratio of the vinyl bond in this Example is as low as 80%, falling out of the presently claimed scope. In addition, when the hydrogenation ratio of the vinyl bond is low as in Comparative Examples 17 and 20 as shown in the attached **Table 3**, the resulting compositions show large viscosity change and hence are inferior in thermal stability.

The relation between the present invention and the cited EP '499 reference in terms of the hydrogenation ratio of the vinyl bond is the same as discussed above and shown in the attached **Fig. 3**.

Accordingly, as discussed above, the hydrogenated block copolymer and the compositions of the present invention are not obvious over the cited EP '499 reference.

Furthermore, based upon the fact that the cited art in no way motivates those of ordinary skill in the art to arrive at the

present invention as claimed, it also follows that the outstanding rejection under 35 USC § 103(a) must be withdrawn.

CONCLUSION

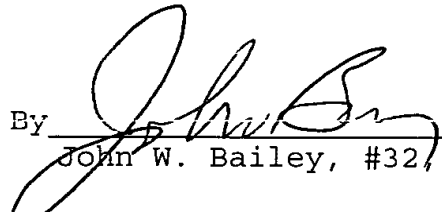
Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance, clearly indicating that all pending claims in the application are allowed and patentable at present.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments: Tables 1-1, 1-2 and 3;  
Figures 1, 2 and 3.